

Distributed by:



www.Jameco.com ♦ 1-800-831-4242

The content and copyrights of the attached
material are the property of its owner.

ISP817X,ISP827X,ISP847X3,2,1

ISP817,ISP827,ISP847-3,-2,-1



LOW INPUT CURRENT PHOTOTRANSISTOR OPTICALLY COUPLED ISOLATORS

APPROVALS

- UL recognised, File No. E91231
- 'X' SPECIFICATION APPROVALS
 - VDE 0884 in 3 available lead form : -
 - STD
 - G form
 - SMD approved to CECC 00802
- Certified to EN60950 by the following Test Bodies :-
 - Nemko - Certificate No. P01102465
 - Fimko - Certificate No. FI18162
 - Semko - Reference No. 0202041/01-25
 - Demko - Certificate No. 311161-01
- BSI approved - Certificate No. 8001

DESCRIPTION

The ISP817-3,-2,-1, ISP827-3,-2,-1, ISP847-3,-2,-1 series of optically coupled isolators consist of infrared light emitting diodes and NPN silicon photo transistors in space efficient dual in line plastic packages.

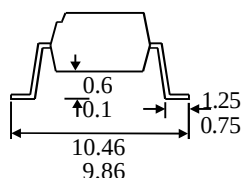
FEATURES

- Options :-
 - 10mm lead spread - add G after part no.
 - Surface mount - add SM after part no.
 - Tape&reel - add SMT&R after part no.
- Low input current 0.5mA I_F
- High Current Transfer Ratio (50% min)
- High Isolation Voltage (5.3kV_{RMS}, 7.5kV_{PK})
- High BV_{CEO} (70V min)
- All electrical parameters 100% tested
- Custom electrical selections available

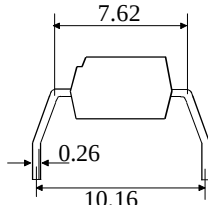
APPLICATIONS

- Computer terminals
- Industrial systems controllers
- Measuring instruments
- Signal transmission between systems of different potentials and impedances

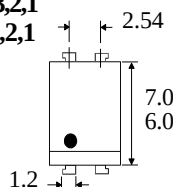
OPTION SM SURFACE MOUNT



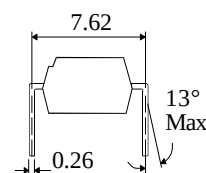
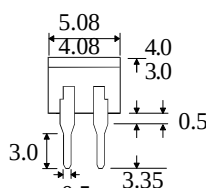
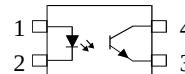
OPTION G SURFACE MOUNT



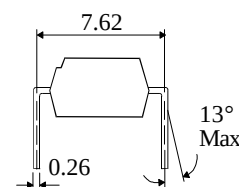
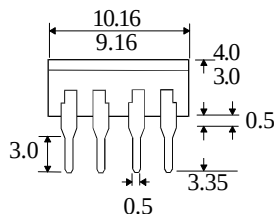
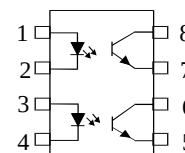
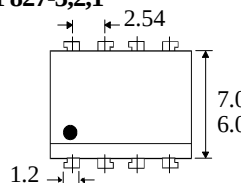
ISP817X3,2,1 ISP817-3,2,1



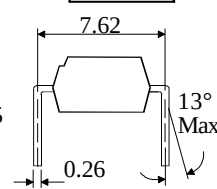
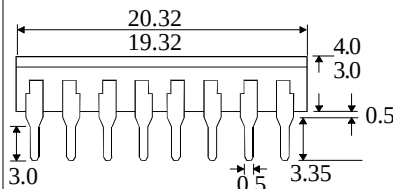
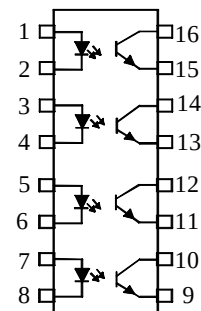
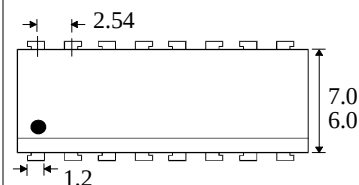
Dimensions in mm



ISP827X3,2,1 ISP827-3,2,1



ISP847X3,2,1 ISP847-3,2,1



ISOCOM COMPONENTS LTD

Unit 25B, Park View Road West,
Park View Industrial Estate, Brenda Road
Hartlepool, Cleveland, TS25 1YD
Tel: (01429) 863609 Fax : (01429) 863581

ISOCOM INC

1024 S. Greenville Ave, Suite 240,
Allen, TX 75002 USA
Tel: (214) 495-0755 Fax: (214) 495-0901
e-mail info@isocom.com
<http://www.isocom.com>

ABSOLUTE MAXIMUM RATINGS
(25°C unless otherwise specified)

Storage Temperature	_____	-55°C to + 125°C
Operating Temperature	_____	-30°C to + 100°C
Lead Soldering Temperature	(1/16 inch (1.6mm) from case for 10 secs) 260°C	

INPUT DIODE

Forward Current	_____	50mA
Reverse Voltage	_____	6V
Power Dissipation	_____	70mW

OUTPUT TRANSISTOR

Collector-emitter Voltage BV_{CEO}	_____	70V
Emitter-collector Voltage BV_{ECO}	_____	6V
Power Dissipation	_____	150mW

POWER DISSIPATION

Total Power Dissipation	_____	200mW
(derate linearly 2.67mW/°C above 25°C)		

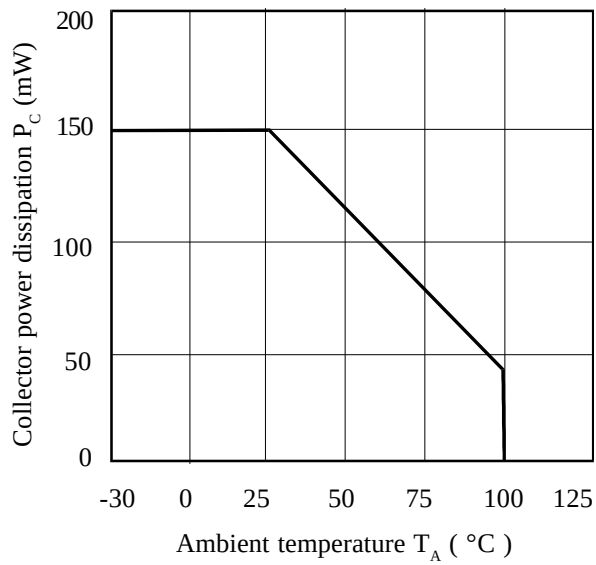
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless otherwise noted)

PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITION
Input	Forward Voltage (V_F)		1.2	1.4	V	$I_F = 20\text{mA}$
	Reverse Current (I_R)			10	μA	$V_R = 4\text{V}$
Output	Collector-emitter Breakdown (BV_{CEO}) (Note 2)	70			V	$I_C = 1\text{mA}$
	Emitter-collector Breakdown (BV_{ECO})	6			V	$I_E = 10\mu\text{A}$
	Collector-emitter Dark Current (I_{CEO})			100	nA	$V_{CE} = 20\text{V}$
Coupled	Current Transfer Ratio (CTR) (Note 2) ISP817-3, ISP827-3, ISP847-3	70			%	$0.5\text{mA } I_F, 0.4\text{V } V_{CE}$
		100			%	$1.0\text{mA } I_F, 0.4\text{V } V_{CE}$
	ISP817-2, ISP827-2, ISP847-2	50			%	$0.5\text{mA } I_F, 0.4\text{V } V_{CE}$
	ISP817-1, ISP827-1, ISP847-1	50			%	$1.0\text{mA } I_F, 0.4\text{V } V_{CE}$
	Collector-emitter Saturation Voltage -3			0.4	V	$0.5\text{mA } I_F, 0.35\text{mA } I_C$
	-2			0.4	V	$0.5\text{mA } I_F, 0.25\text{mA } I_C$
	-1			0.4	V	$1.0\text{mA } I_F, 0.5\text{mA } I_C$
	Input to Output Isolation Voltage V_{ISO}	5300			V_{RMS}	See note 1
		7500			V_{PK}	See note 1
	Input-output Isolation Resistance R_{ISO}	5×10^{10}			Ω	$V_{IO} = 500\text{V}$ (note 1)
	Output Rise Time t_r		4	18	μs	$V_{CE} = 2\text{V},$
	Output Fall Time t_f		3	18	μs	$I_C = 0.2\text{mA}, R_L = 100\Omega$

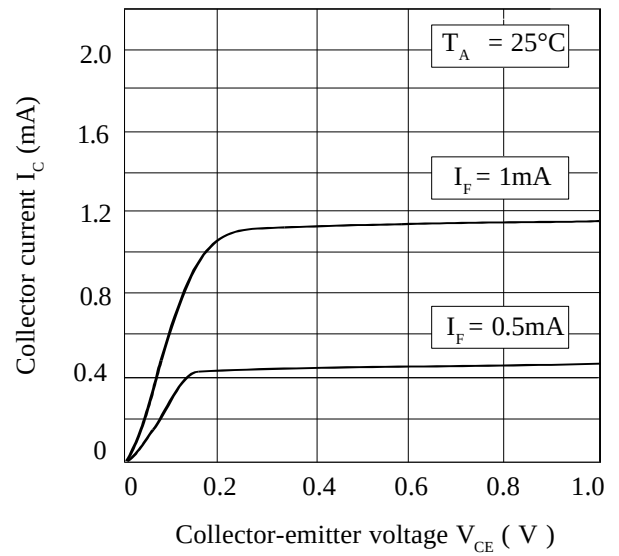
Note 1 Measured with input leads shorted together and output leads shorted together.

Note 2 Special Selections are available on request. Please consult the factory.

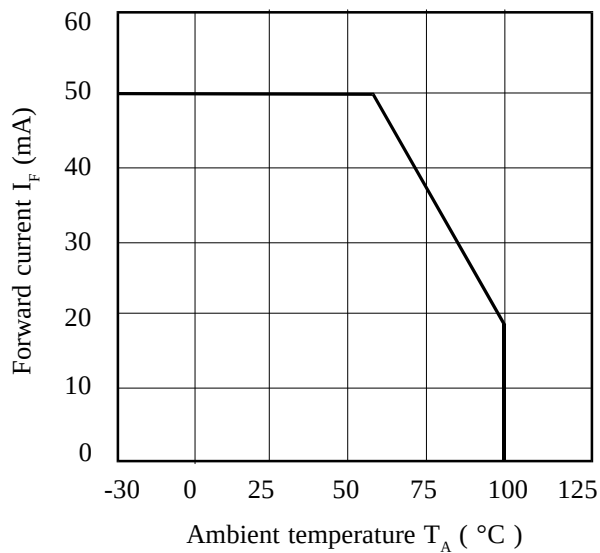
Collector Power Dissipation vs. Ambient Temperature



Collector Current vs. Low Collector-emitter Voltage



Forward Current vs. Ambient Temperature



Relative Current Transfer Ratio vs. Ambient Temperature

